

Claims

- [c1] 1. A disc brake for land vehicles, comprising:
a brake disc rotating with a wheel axle;
a brake caliper which is mounted in a movable manner in a nonrotating wheel-axle housing arranged about said wheel axle, and
two brake linings, one on each side of the brake disc, said brake linings being designed in such a way that, when acted upon by an activating mechanism, they are caused to bear against the sides of the brake disc for transmitting a braking torque to the wheel axle;
said brake caliper comprises two brake-lining holders which are axially displaceable relative to one another and relative to the wheel-axle housing, and
the brake-lining holders each have at least one actuation surface for engagement with said activating mechanism, as a result of which the brake-lining holders are displaced toward each other upon activation.
- [c2] 2. The disc brake as recited in claim 1, wherein the brake-lining holders have attachment seats for said brake linings, which attachment seats are placed at a distance from said actuation surfaces.

- [c3] 3. The disc brake as recited in claim 1, wherein an outer brake-lining holder is designed such that, in the axial direction of the wheel axle, it at least partially surrounds an inner brake-lining holder.
- [c4] 4. The disc brake as recited in claim 3, wherein the actuation surface of the inner brake-lining holder is directed toward a corresponding actuation surface of the outer brake-lining holder.
- [c5] 5. The disc brake as recited in claim 4, wherein said activating mechanism is axially fixed in relation to the wheel-axle housing and comprises a separating member acting between said actuation surfaces for the purpose of mutual axial displacement of the brake-lining holders.
- [c6] 6. The disc brake as recited in claim 5, wherein said separating member consists of a cam element, which cam element is rotatable about a camshaft extending substantially at right angles to the wheel axle.
- [c7] 7. The disc brake as recited in claim 6, wherein said cam element is a so-called S-cam.
- [c8] 8. The disc brake as recited in claim 6, wherein said cam element is a so-called Z-cam.
- [c9] 9. The disc brake as recited in claim 6, wherein said cam

element has a wedge-shaped cross section.

- [c10] 10. The disc brake as recited in claim 6, wherein needle-roller bearings are placed between the cam element and the actuation surfaces.
- [c11] 11. The disc brake as recited in claim 6, wherein an activating lever is connected in a rotationally fixed manner to the camshaft, which activating lever has an end portion designed for actuation by an actuator rod from a power member.
- [c12] 12. The disc brake as recited in claim 1, wherein the brake-lining holders are both arranged so as to slide along two mutually parallel suspension axles which are likewise parallel to the wheel axle and are secured in the wheel-axle housing.
- [c13] 13. The disc brake as recited in claim 12, wherein the outer brake-lining holder is articulated so that it can be pivoted upward about one of the suspension axles between a downwardly pivoted operating position and an upwardly pivoted maintenance position for replacing the brake linings.
- [c14] 14. A method for providing a disc brake in a land vehicle, said method comprising:
providing a brake disc that is rotatable with a wheel axle;

configuring an associated brake caliper to be movable in a non-rotating wheel-axle housing that is arranged about the wheel axle;
providing two brake linings, one on each side of the brake disc, said brake linings configured so that when acted upon by an activating mechanism are caused to bear against sides of the brake disc and thereby transmit a braking torque to the wheel axle;
providing said brake caliper with two brake-lining holders that are axially displaceable relative to one another and relative to the wheel-axle housing; and
configuring the brake-lining holders to each have at least one actuation surface for engagement with said activating mechanism when the brake-lining holders are displaced toward each other upon activation.

[c15] 15. The method as recited in claim 14, wherein the brake-lining holders have attachment seats for said brake linings, said attachment seats being located at a distance from said actuation surfaces.

[c16] 16. The method as recited in claim 14, wherein an outer brake-lining holder is provided and configured so that, in the axial direction of the wheel axle, said outer brake-lining holder at least partially surrounds an inner brake-lining holder.

- [c17] 17. The method as recited in claim 16, further comprising orienting the actuation surface of the inner brake-lining holder toward a corresponding actuation surface of the outer brake-lining holder.
- [c18] 18. The method as recited in claim 17, further comprising axially fixing said activating mechanism in relation to the wheel-axle housing and comprising a separating member acting between said actuation surfaces for the purpose of mutual axial displacement of the brake-lining holders.
- [c19] 19. The method as recited in claim 18, wherein said separating member comprises a cam element that is rotatable about a camshaft extending substantially at right angles to the wheel axle.
- [c20] 20. The method as recited in claim 19, further comprising selecting said cam element to be S-cam type.
- [c21] 21. The method as recited in claim 19, further comprising selecting said cam element to be Z-cam type.
- [c22] 22. The method as recited in claim 19, further comprising establishing said cam element to have a wedge-shaped cross section.
- [c23] 23. The method as recited in claim 19, further comprising

ing utilizing needle-roller bearings that are placed between the cam element and the actuation surfaces.

[c24] 24. The method as recited in claim 19, further comprising an activating lever connected in a rotationally fixed manner to the camshaft having an end portion configured for actuation by an actuator rod from a power member.

[c25] 25. The method as recited in claim 19, further comprising arranging the brake-lining holders to slide along two mutually parallel suspension axles that are oriented parallel to the wheel axle and are securable in a wheel-axle housing.

[c26] 26. The method as recited in claim 25, further comprising the outer brake-lining holder being articulated to pivot upward about one of the suspension axles between a downwardly pivoted operating position and an upwardly pivoted maintenance position for replacing the brake linings.